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CLAIMS 1 CLAIM:

1. (Currently Amended) Separator having a vertical axis of rotation (D) and a drum (21) with solids discharge openings in a single cone or double cone centrifugal space in which a disc stack consisting of a plurality of superimposed, preferably conical discs (1) is arranged, which have bores (2,8,9) which in a cooperating manner form at least one channel (3,6,7) in the disc stack, and having a distributor (22) with a distributor shaft (16) concentrically surrounding a drum axis (11) and a lower base section (25) which expands radially and in which one or more distributor channels (14) are distributed in the form of bores,

characterized in that the diameter of the at least one channel (3,6,7) inside the disc stack above the disc which is the lowest in the flow direction is not constant and/or in that the at least one channel (3,6,7) is arranged to be sloped with respect to the axis of rotation of the drum, and in that the bores of the at least one distributor channel (14) are not radially oriented with respect to the drum axis (11) in the drum (21).  
A separator, comprising:

a vertical axis of rotation;

a drum having solids discharge openings and a conical centrifugal space;

a disc stack located in the conical centrifugal space and including a plurality of conical discs super-imposed on one another, the conical discs having disc bores forming at least one rising channel in the disc stack;

a drum;

a distributor including a distributor shaft concentrically surrounding a drum axis of the drum, and further including a lower base section which expands radially, and on which lower base section are one or more distributor channels;

a diameter of the at least one rising channel inside the disc stack, located above the disc which is the lowest disc in a flow direction, is one or both of a) not constant and b)

sloped with respect to the drum axis; and

the one or more distributor channels are not radially oriented with respect to the drum axis.

2. (Currently Amended) ~~Separator~~ The separator according to Claim 1, characterized in that ~~wherein the distributor bores forming the distributor channels (14) are oriented relative to the a radial line [[(1)]R[(1)]] through the drum axis (D) of the drum (21) in a laggingly sloped manner in a radially interior bore section against the a rotating direction of the drum (21).~~

3. (Currently Amended) ~~Separator~~ The separator according to one of the preceding claims, characterized in that ~~Claim 1, wherein the one or more distributor channels (14) is located in a further bore section lead-leading into the drum (21), which bore section is oriented upward in the drum and leads out directly below a rising channel one of the at least one channels of the disc stack into the drum (21).~~

4. (Currently Amended) ~~Separator~~ The separator according to one of the preceding claims, characterized in that ~~the Claim 1, wherein an angle ( $\beta$ ) between the one or more distributor channel channels (14) and the pertaining a radial line (R) at the starting area of the distributor channel (10), at its at an inner circumference of the one or more distributor channels[[,]] is between 15 and 85°, particularly between 25° and 65°.~~

5. (Currently Amended) ~~Separator~~ The separator according to one of the preceding claims, characterized in that ~~Claim 1, wherein the one or more distributor channels have includes an expanding or a slot type outlet (15) which extends tangentially either in or against the a rotating direction of the drum (21) and/or is oriented in the upward direction in the drum (21).~~

6. (Currently Amended) ~~Separator~~ The separator according to one of the preceding claims, characterized in that ~~the Claim 1, wherein a geometry of the disc bores of the discs (11) of a at least one rising channel varies in the at least one rising channel such~~

that, during the an operation, the gaps between the discs are uniformly charged with liquid over the an entire height of the disc stack.

7. (Currently Amended) Separator The separator according to one of the preceding claims, characterized by Claim 1, further including a piston valve for opening and closing the solids discharge openings.

8. (Currently Amended) Separator The separator according to one of the preceding claims, characterized in that Claim 1, wherein the diameter of the at least one rising channel (3,6,7) changes in steps at over a distance of several discs (1).

9. (Currently Amended) Separator The separator according to one of the preceding claims, characterized in that Claim 1, wherein the diameter of the at least one rising channel (3,6,7) changes continuously from one disc (1) to the next (1) disc.

10. (Currently Amended) Separator The separator according to one of the preceding claims, characterized in that Claim 1, wherein the diameter of the at least one rising channel (3,6,7) decreases in the a flow direction.

11. (Currently Amended) Separator The separator according to one of the preceding claims, characterized in that the Claim 1, wherein a geometry of the disc bores (2,8,9) of the channel (3,6,7) changes from one disc to the next disc.

12. (Currently Amended) Separator The separator according to one of the preceding claims, characterized in that Claim 1, wherein the disc bores (2,8,9) have a polygonal shape.

13. (Currently Amended) Separator The separator according to one of the preceding claims, characterized in that Claim 1, wherein the disc bores (2,8,9) have a round shape.

14. (Currently Amended) Separator The separator according to one of the preceding claims, characterized in that Claim 1, wherein the disc bores (2,8,9) have a curved shape.

15. (Currently Amended) ~~Separator~~The separator according to one of the preceding claims, characterized in that Claim 1, wherein each of the at least one rising channel (3,6,7) consists of includes several disc bores (2,8,9).

16. (Currently Amended) ~~Separator~~The separator according to one of the preceding claims, characterized in that Claim 1, wherein the disc bores (2,8,9) of each of the at least one rising channel (3,6,7) form a perforated pattern in the discs-(1).

17. (Currently Amended) ~~Separator~~The separator according to one of the preceding claims, characterized in that Claim 1, wherein the at least one rising channel (3,6,7) is oriented to be sloped with respect to the drum axis-(A).

18. (Currently Amended) ~~Separator~~The separator according to one of the preceding claims, characterized in that Claim 1, wherein the at least one rising channel (3,6,7) extends in a curved manner in the disc stack.

19. (Currently Amended) ~~Separator~~The separator according to one of the preceding claims, characterized in that Claim 1, wherein the at least one rising channel (groove 20,2,8,9) includes a groove that is oriented asymmetrically with respect to the a bisecting line (W) of its assigneda disc segment (19)to which the groove is assigned.

20. (Currently Amended) ~~Separator~~The separator according to one of the preceding claims, characterized in that Claim 1, wherein the at least one rising channel (groove 20,3,6,7) includes a groove that is oriented to be laterally offset with respect to the a bisecting line (W) of its assigneda disc segment (19)to which the groove is assigned and which is bounded by one or more of webs (17) and/or lugs (18).

21. (Currently Amended) ~~Separator~~The separator according to one of the preceding claims or according to the preamble of Claim 1, characterized in that wherein the discs are placed on radial webs of the distributor shaft (16), the, and a discharge channel (6,7) in the disc stack or a groove (20) in the distributor shaft (16) for the discharge beingis oriented asymmetrically with respect to the a bisecting line (W) of each a disc segment (19).

22. (Currently Amended) ~~Separator~~ The separator according to one of the preceding claims, characterized in that Claim 1, wherein the at least one rising channel is a rising channel (3) for feeding the product into the disc stack.

23. (Currently Amended) ~~Separator~~ The separator according to one of the preceding claims, characterized in that Claim 1, wherein the at least one rising channel is a discharge channel (6,7) for discharging a liquid phase from the disc stack.

24. (Currently Amended) ~~Separator~~ The separator according to one of the preceding claims, characterized in that, in each case, one of Claim 23, wherein the at least one discharge channels (6,7) for discharging various liquid phaseschannel is constructed close to the an inner circumference (1) or close to the an outer circumference of the disc stack inside the disc stack.

25. (New) The separator of Claim 1, wherein an angle between the one or more distributor channels and a radial line starting at an inner circumference of the at least one distributor channel is between 25° and 65°.

26. (New) The separator of Claim 1, wherein the one or more distributor channels includes an outlet which extends tangentially in an upward direction in the drum.